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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,416	10/28/2003	Sanjay Verma	3222-5	5357
<div>20575      7590      01/22/2008</div> <div>MARGER JOHNSON &amp; MCCOLLOM, P.C.</div> <div>210 SW MORRISON STREET, SUITE 400</div> <div>PORTLAND, OR 97204</div>				
			<div>EXAMINER</div> <div>PYO, MONICA M</div>	
			<div>ART UNIT</div> <div>2161</div>	<div>PAPER NUMBER</div>
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/696,416

Applicant(s)

VERMA ET AL.

Examiner

Monica M. Pyo

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This communication is responsive to the Amendment filed 11/7/2007.
2. Claims 1-24 are currently pending in this application. Claims 1, 5, 10, 14, 18 and 23 are independent claims. In the Amendment filed on 11/7/2007, claims 1, 4-5, 8-9 and 23 are amended and claim 24 is newly added. This action is made Final.

#### ***Claim Objections***

3. Claim 9 is still objected to because of the following informalities:

Regarding claim 9, applicant recites "A method" in this dependent claim. The phrase "A method" should be changed to "The method" in this claim.

4. Claim 1 is objected to because of the following informalities:

Regarding Claim 1, this claims, in view of MPEP 1.121 (c), does not disclose the changes that have been made relative to the immediate prior version of the claims (5/17/2007). The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or few consecutive characters. In the instant case, claim 1 in the amendment filed on 11/7/2007 does not show the limitation of "that initiate a subgroup."

Appropriate corrections are required.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4-6 and 8-24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,745,747 issued to Chang et al. (hereinafter Chang).

Regarding Claims 1 and 5, Chang discloses a database management system, comprising:

A). **a processor associating multiple different activities (i.e., one or more processes) with a same transaction (i.e., transaction comprising a lock and processes the locked resource), each of the multiple different activities consisting of a separate different associated subgroup of program instructions for the same transaction, each different subgroup of program instructions initiating a different associated subgroup of read and/or write actions (i.e., commit or rollback the changes) on an associated group of data, as to the lock manager allocates and places a lock request block [LRB] in the queue (Chang: col. 3, lns. 19-36);**

B). **the processor associating separate lock durations each different subgroup of program instructions associated with each of the different activities (i.e., one or more different process IDs) associated with the same transaction, and maintaining the multiple different locks for all of the subgroup of program instructions associated with the same activities (i.e., multiple processes in one transaction) and then releasing all of the multiple different locks associated with the same activities together only when all of the subgroup of program instructions associated with the same activities are completed so that all of the multiple different locks associated with the same activities have a same lock duration, as to**

the lock manager uses the transaction ID to release all locks belonging to the transaction (Chang: col. 3, lns. 37-52; col. 4, lns. 33-59; fig. 3).

Regarding Claims 2 and 6, Chang discloses the system wherein one of the activities include a group of individual shared lock operations (i.e., a shared ID) and the processor activates locks for each of the individual shared lock operations in the group and releases the locks only when the all of the individual shared lock operations in the group are completed (Chang: col. 4, lns. 21-59).

Regarding Claims 4 and 8, Chang discloses the system wherein the processor releases all of the multiple different locks associated with the same activities in one operation only when all of the multiple different subgroup of program instructions associated with the same activities are completed (Chang: col. 4, lns. 21-59).

Regarding claims 9 and 22, Chang discloses the method including:

**A). assigning a same unique activity identifier to multiple different arbitrary database access instructions that constitute the different activities in the transaction, the database access instructions performing one or more operations on multiple data items in a database and the activity identifier (i.e., process ID) assigned to and associated with the database access instructions independently of any relationship that may exist between the multiple data items in the database accessed by the database access instructions (Chang: col. 3, lns. 37-52; col. 4, lns. 33-59; fig. 3);**

**B). assigning multiple locks to the multiple data items corresponding with the operations performed on the multiple data items pursuant to the database access instructions (Chang: col. 4, lns. 1-33); and**

**C). preventing other transactions and other associated activities from accessing the multiple data items until all of the multiple operations are completed for all of the database access instructions assigned to the activity identifier (Chang: col. 3, lns. 53-67).**

Regarding claims 10, 14 and 18, Chang discloses a database management system, comprising:

**A). a processor configured to assign activity identifiers (i.e., process Ids) to different individual subgroups of database access instructions for a same transaction that each perform one or more operations (i.e., commit or roll back) on multiple data items in a database, the activity identifiers assigned to and associated with the database access instructions independently of any relationship that may exist between the multiple data items in the database accessed by the database access instructions, as to the lock manager allocates and places a lock request block [LRB] in the queue (Chang: col. 3, lns. 19-36);**

**B). the processor further configured to assign multiple locks to the multiple data items corresponding with the operations performed on the multiple data items pursuant to the database access instructions associated with the same activity identifiers and further configured to only release the multiple locks when all of the multiple operations are completed for all of the database access instructions assigned to the same activity**

**identifiers**, as to the lock manager uses the transaction ID to release all locks belonging to the transaction (Chang: col. 3, lns. 37-52; col. 4, lns. 33-59; fig. 3).

Regarding claims 11, 15 and 19, Chang discloses the system wherein the processor is further configured to assign the activity identifiers to an arbitrary group of related database access instructions performing operations on an arbitrarily related group of data items (Chang: col. 4, lns. 21-59).

Regarding claims 12, 16 and 20, Chang discloses the system wherein the processor is further configured to assign common transaction identifiers to different related groups of database access instructions assigned different activity identifiers and coordinate when the different related groups of database access instructions are allowed to perform operations on the data items (Chang: col. 3, lns. 53-col. 4, lns. 33- Chang discloses the sequence steps involved in locking a resource and the process of the lock manager having one transaction with multiple different LRBs).

Regarding claims 13, 17 and 21, Chang disclose the system wherein the processor is configured to assign a first transaction identifier to a group of individual shared operations and assign locks to the data items associated with the shared operations, the processor further configured to hold the locks until all of the individual shared operations in the group have been completed (Chang: col. 3, lns. 19-52; col. 4, lns. 34-59; figs. 2-3).

Regarding claim 23, Chang discloses a method comprising:

**A). assigning a first activity identifier and a transaction identifier to a first group of database access instructions for a transaction, as a single transaction can have multiple processes and each process can request a resource lock (Chang: col. 10-26);**

**B). assigning a first set of multiple locks to a first set of data items (i.e., LRBs ahead of the current LRB) accessed by the first group of database access instructions, the multiple locks assigned to different ones of the first set of data items (i.e., each lockable resource) according to the first subgroup of database access instructions, as the lock manager maintains a separate queue of lock requests for each lockable resource (Chang: col. 3, lns. 27-36 and 53-62; col. 4, lns. 11-19);**

**C). identifying a second subset of data items (i.e., current LRB) from the first set of data items according to the first group of database access instructions, as the lock manager checks to see if there are any LRBs in a wait state in the queue which are ahead of the current LRB (Chang: col. 3, lns. 53-col. 4, lns. 10);**

**D). assigning a second activity identifier and the same transaction identifier to a second group of database access instructions for the same transaction that modify the second subset of data items identified the same transaction that modify the second subset of data items identified by the first group of database access instructions, as the lock manager compares the GGM of the requested resource with the requested lock mode in the LRB to see whether the resource is available (Chang: col. 4, lns. 1-19);**

**E). assigning a second set of multiple locks to the second subset of data items, the second set of multiple locks having a different lock duration than the first set of multiple**



**locks**, as the lock manager inserts the current LRB into the queue where LRB contains the data storage fields identifying the resource, mode, duration and the status (Chang: col. 3, lns. 36-67);

**F). releasing the first set of multiple locks for all of the first set of data items that are not part of the second subset of data items only after the second group of database access instructions have completed**, as the process that originally granted the lock can release it by sending a release request containing that process' process ID to the lock manager (Chang: col. 4, lns. 34-59; figs. 2-3); and

**G). releasing the entire second set of locks only when all of the operations for the second group of database access instructions have completed modification of the second subset of data items**, as the transaction commits or rolls back, the lock manager uses the transaction ID to release all locks belonging to the transaction (Chang: col. 4, lns. 34-59; figs. 2-3).

Regarding claims 24, Chang disclose the method including releasing all of the first set of locks in one operation and releasing all of the second set of locks in one operation (Chang: col. 4, lns. 34-59).

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang as applied to claims 1-2, 4-6 and 8-24 above, in view of U.S. Patent No. 5,497,483 issued to Beardsley et al. (hereinafter Beardsley).

Regarding Claims 3 and 7, Chang discloses the system including individual activities for the transaction, the processor assigning activity identifiers to the activities (Chang: col. 3, lns. 19-36).

Chang does not explicitly disclose: memory containing a bit map that tracks activities.

However, Beardsley disclose: memory containing a bit map that tracks activities and (Beardsley: col. 10, lns. 7-18; fig. 9).

It would have been obvious to a person with ordinary skill in the art at the time of invention to modify the teachings of Chang with the teachings of Beardsley to utilize the bit map setting with the motivation to enhance the controlling of a track transfers (Beardsley: col. 9, lns. 53-66).

*Response to Arguments*

9. Applicant's arguments with regarding the references Walker, Bhattacharjee and Ng deemed to be moot since the new rejection based on reference Chang is made in this Office Action.

*Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica M. Pyo whose telephone number is 571-272-8192. The examiner can normally be reached on Mon & Thur 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Monica M Pyo  
Examiner  
Art Unit 2161

*mpyo*  
1/18/2008

  
ETIENNE LEROUX  
PRIMARY EXAMINER